

Quick-start guide for laminar molbloc with downstream pressure calibration

FLUKE®

Calibration

By definition, for a laminar molbloc with downstream calibration, the molbloc outlet pressure must remain around atmospheric pressure, between 85 to 110 kPaa (12 to 15 psia).

1. Setup molstic and devices. See figure below for most common setup. Press the [9 UNIT] button on the molbox terminal and choose the corresponding flow unit to match the test device.
2. Select gas and type of calibration by pressing the [8 GAS] button on the molbox terminal. Select the gas that you will be flowing, and the type of calibration if that is selectable (typically only on late model molbox1 and molbox1+ terminals, not on molbox RFM).
3. Set supply regulator from bottle/wall between 150 to 550 kPa gauge (20 to 80 psig) if using molbox1+ A700K or molbox RFM. This prevents accidental overpressure of QRPTs inside molbox1+ A700K that are 700 kPaa (100 psia). Note that 550 kPa gauge is about 650 kPaa. Set pressure between 150 to 200 kPa gauge (20 to 30 psig) if using molbox1 A350K.
4. With zero flow and inlet and/or outlet of molbloc open to atmosphere, check molbloc upstream and downstream pressures at atmospheric pressure by pressing the [5 P&T] button on molbox. Do they make sense and aren't too far apart?
5. Set the molstic supply pressure regulator:
 - a. If the molbloc is downstream of the Device Under Test (DUT) set the pressure on the molstic supply regulator to the requirement for the DUT. The molbloc output will be open to atmosphere or around atmospheric pressure.
 - b. If the molbloc is upstream of the DUT set the pressure on the molstic supply regulator to about 180 kPaa (27 psia) as indicated on the molbloc upstream pressure. The molbloc output will be around atmospheric pressure.
6. Purge if necessary by pressing [TARE] then <Purge>. Need to have 50% or more of maximum flow rate to purge effectively. See manual for details
7. Tare if necessary by pressing [TARE] then the necessary sequence. Always tare to upstream pressure when using a molbloc with a low pressure calibration. Note, it is OK to be flowing gas when doing a TARE because the bypass valve is open.
8. Leak check system at operating pressure. Cap outlets if necessary and when pressurized. Close the toggle switch isolation valve that is downstream of the molstic supply regulator. If using a MFC, open the MFC valve to fill its volume that is downstream of its valve. Then close the valve because it might generate heat that can cause faulty readings in leak tests.
9. Start test, use MFC or manual control valve to change flow rates as directed by COMPASS for Flow, or as desired

Typical molstic setup with a downstream calibrated laminar molbloc

